

REPORT DOCUMENTATION PAGEForm Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

1. REPORT DATE (DD-MM-YYYY)

2 April 2003

2. REPORT TYPE

News Release

3. DATES COVERED (From - To)**4. TITLE AND SUBTITLE**

Boeing Tests Critical Components for Advanced Rocket Engine

5a. CONTRACT NUMBER**5b. GRANT NUMBER****5c. PROGRAM ELEMENT NUMBER****6. AUTHOR(S)**

John Mitchell

5d. PROJECT NUMBER

4922

5e. TASK NUMBER

02RT

5f. WORK UNIT NUMBER**7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)**Boeing Integrated Defense Systems
P.O. Box 516
St. Louis, MO 63166**8. PERFORMING ORGANIZATION REPORT NUMBER**

AFRL-PR-ED-PR-2003-078

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)Air Force Research Laboratory (AFMC)
AFRL/PRS
5 Pollux Drive
Edwards AFB CA 93524-7048**10. SPONSOR/MONITOR'S ACRONYM(S)****11. SPONSOR/MONITOR'S NUMBER(S)**

AFRL-PR-ED-PR-2003-078

12. DISTRIBUTION / AVAILABILITY STATEMENT

Approved for public release; distribution unlimited.

13. SUPPLEMENTARY NOTES**14. ABSTRACT**

20030805 154

15. SUBJECT TERMS**16. SECURITY CLASSIFICATION OF:****a. REPORT**

Unclassified

b. ABSTRACT

Unclassified

c. THIS PAGE

Unclassified

17. LIMITATION OF ABSTRACT

A

18. NUMBER OF PAGES**19a. NAME OF RESPONSIBLE PERSON**

Sheila Benner

19b. TELEPHONE NUMBER (include area code)

(661) 275-5963

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std. Z39.18

FILE

MEMORANDUM FOR PRS (Contractor Publication)

FROM: PROI (STINFO)

02 Apr 2003

SUBJECT: Authorization for Release of Technical Information, Control Number: **AFRL-PR-ED-PR-2003-078**
John Mitchell (Boeing), "Boeing Tests Critical Components for Advanced Rocket Engine"

Press Release

(Statement A)

Thamberg
5320



News Release

Boeing Integrated Defense Systems
P.O. Box 516
St. Louis, MO 63166
www.boeing.com

Boeing tests critical components for Advanced Rocket Engine

(ST. LOUIS, MO. March XX, 2002) ³¹ - The Boeing Company (NYSE:BA) last week tested a state-of-the-art liquid oxygen turbopump, marking a significant step forward in the development of next-generation rocket engine technology. A team of Boeing's Rocketdyne Propulsion & Power unit, Air Force, and NASA personnel conducted the hot-fire testing at NASA's John C. Stennis Space Center (SSC) in Mississippi.

This test, one of nine that have been planned, follows a related series of hot-fire tests in which a Rocketdyne-built pre-burner -- which provides oxygen-rich gasses to the oxidizer turbopump turbine drive -- went "six for six" in that series. The Rocketdyne pre-burner was subsequently attached to the new oxidizer turbopump for its testing.

Both the oxidizer turbopump and the pre-burner test series are for the Air Force Research Laboratory's (AFRL) Integrated Powerhead Demonstration (IPD).

Upon completion of its hot-fire test series, the oxidizer turbopump will become part of the IPD engine system and help to provide advancement of key technologies that could find application in future Air Force rocket applications or NASA's Next Generation Launch Technology program.

Bob Brengle, program manager for Rocketdyne's role in the IPD, said the new turbopump is leading edge. "We've combined proven technologies with exciting new innovations in the component," Brengle said, "including hydrostatic bearings that are virtually frictionless. In addition, a number of the internal parts use a new material that will help provide superior performance. We anticipate excellent performance, even in the oxygen-rich environment where it will do its work.

(MORE)

DISTRIBUTION STATEMENT A
Approved for Public Release
Distribution Unlimited

"This new turbopump could be a prototype for a whole new generation of rocket engines," said Steve Bouley, division director for Advanced Propulsion Development at Rocketdyne. "In future launch systems, there will continue to be a premium on low cost, simplicity of design, high performance and reliability. We believe that this component hits the mark, and that the continuing performance tests will bear that out."

"For its part, the pre-burner that we tested is the first large-scale, oxidizer-rich type to actually be developed and hot-fire tested in the U.S.," added Brengle. "Smaller ones have been tested at Rocketdyne facilities, but this series of tests is a first for one of this magnitude." He said that the goal of the test series was to characterize the pre-burner's "behavior" prior to its connection to the turbopump.

Added AFRL's Jeff Thornburg, IPD project manager, "The IPD program supports the Department of Defense's Integrated High Performance Rocket Propulsion Technology (IHRPT) program. The goal of the IHRPT program is to satisfy our Phase One milestones for doubling the capability of boost engines for access to space. IPD has also demonstrated a very successful partnership between AFRL, Rocketdyne, NASA's Stennis Space Center, and NASA's Marshall Space Flight Center."

The IHRPT program is a DoD/NASA/Industry coordinated effort to develop revolutionary and innovative technologies by the year 2010 that will generate significant enhancements of rocket propulsion capabilities over current state-of-the-art technologies.

Rocketdyne Propulsion & Power is a global leader in the design, development and manufacture of rocket propulsion and space power systems and is part of the Integrated Defense System (IDS) of The Boeing Company. In addition to the Space Shuttle Main Engine, Rocketdyne provides propulsion systems for Delta and Atlas launch vehicles.

(MORE)

A unit of The Boeing Company, Integrated Defense Systems is one the world's largest space and defense businesses. Headquartered in St. Louis, Boeing Integrated Defense Systems is a \$23 billion business. It provides systems solutions to its global military, government and commercial customers. It is a leading provider of intelligence, surveillance and reconnaissance; the world's largest military aircraft manufacturer; the world's largest satellite manufacturer and a leading provider of space-based communications; the primary systems integrator for U.S. missile defense; NASA's largest contractor; and a global leader in launch services.

###

Contact:
John Mitchell
(818) 586-4564
john.k.mitchell@boeing.com



New Polynitrogen Compounds



^{ERL}
Karl Christe^{a,b}, Ralf Haiges^{a,b}, Stefan Schneider^{a,b},
Thorsten Schroer^{a,b}, Ashwani Vij^a, Vandana Vij^a, and
^{ERL}
William W. Wilson^a

^a Air Force Research Laboratory
Space and Missile Propulsion Division, AFRL/PRSP
10 East Saturn Blvd.
Edwards AFB, CA 93524

and

^b Loker Hydrocarbon Research Institute
University of Southern California
Los Angeles, CA 90089